SUBMISSION TO THE

NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR

Information: **Decision: X**

Issue: Polar Bear Total Allowable Harvest Recommendations for the Baffin Bay Subpopulation

Background:

- The last comprehensive population study for the Baffin Bay (BB) polar bear subpopulation, which is shared with Greenland, was conducted between 1994 and 1997. The 1997 population estimate was 2074 (95% Confidence Interval=1,544–2,604) bears, and the population was predicted to decline given the uncertainty of the Greenlandic polar bear harvest.
- Due to the high uncertainty of the population status which was caused in part by harvest uncertainties and changing environmental conditions, a phased-in reduction in harvest levels was implemented between 2010 and 2014 where Nunavut harvest levels were reduced from 105 bears annually in 2010, to 65 bears annually in 2014.
- The Canada-Greenland Joint Commission on Polar Bears (JC) also decided that a new study should be conducted that will provide new information on abundance for the BB polar bear subpopulation; the JC tasked the Scientific Working Group (SWG) with that study.
- The SWG completed their three-year study on the BB and Kane Basin (KB) Polar Bear subpopulations in 2014 and presented the results from that study to the JC in July 2016.
- Following the final report of the BB and KB polar bear study, the JC tasked the SWG with providing harvest recommendations through a Harvest Risk Assessment study.
- In July 2017 a harvest risk analysis report was submitted to the JC that addressed management objectives of interest to the JC.
- The GN consulted with affected communities in January 2017 on the results of the SWG scientific study and DOE traditional knowledge study for BB and KB Polar Bear subpopulations.

- The SWG's scientific study report indicated an increase in absolute numbers of the population estimates from the previous studies for both the BB and KB subpopulations. BB currently has a strong potential for population growth given the relatively healthy litter production, however, male survival rates appeared to be lowered and decline in sea-ice due to climate change is also a concern.
- The current mean BB population estimate, from the 2011-2014 study, is 2,826 (95% Confidence Interval = 2,059 – 3,593) bears, while the 1997 estimate was 2074 (95% Confidence Interval = 1,544 – 2,604) bears. The report cautions that the BB study results from the 1990's cannot be properly compared to the most recent study results, particularly the abundance estimate. Changes in environmental conditions and sampling methodology that occurred between the two studies do not allow inferences about the trend of the BB polar bear population. However, overall the study confirmed that there was no decline in BB polar bear abundance as had been previously predicted.
- BB polar bear hides were banned from export out of Nunavut in 2010 due to a trade ban. The trade ban resulted from concerns that the combined Nunavut and Greenland harvest from the BB subpopulation was unsustainable and the population was likely decreasing.
- The Negative Non-Detriment Finding for the BB polar bear subpopulation was removed which resulted in the trade ban being lifted as of July 1, 2017. Bears harvested from July 2013 to June 2017 were also allowed to enter trade as the most recent survey results indicate the harvest during that time was sustainable.

Current Status:

- The SWG prepared a harvest risk analysis report using the recent population data for the Baffin Bay abundance study. In that report, harvest scenarios and harvest risks were modeled in response to requests from the JC.
- The harvest risk analyses incorporated various demographic approaches and vital rates based on polar bear life history, and potential effects of future sea-ice conditions on polar bear population size and status through projected trends in carrying capacity.
- The JC decided on a low-to-medium risk tolerance for the BB polar bear subpopulation with a management objective of maintaining a subpopulation size that is in balance with the number of bears the environment can support.
- The JC chose a harvest scenario that has a 70% chance of successfully meeting the management objective. In particular, for BB that means a total removal rate of 5.7%, or 160 bears per year between Canada and Greenland, split evenly, at an overall sex ratio of 1:1. Instead of selecting a low risk approach of a 4.3% harvest rate that is otherwise common for most polar bear subpopulations, the JC opted for a medium risk harvest rate.

- The Harvest Risk Assessment reported that there was a lowered survival of males and a skew in the sex ratio that indicated that females comprise nearly 70% of the independent bears in BB. The report emphasized that a depletion of adult males may be an emerging conservation concern. In light of this concern, a combined harvest sex ratio of 1 male for each female was recommended.
- The selected harvest rate for BB reflects the particular population demographics for this population and cannot be applied across all other Nunavut polar bear subpopulations. BB currently has a strong potential for population growth and has relatively healthy litter production. Each polar bear subpopulation is managed on a case by case basis and management recommendations are dependent on the specific population demographics.
- The harvest risk analyses also provide information for required ongoing monitoring activities in order to maintain such harvest levels since it is assumed that management changes will be implemented at 15-year intervals. If changes occur in the sea-ice, survival rates (especially those of males), the litter size, or the harvest sex ratio, then the suggested harvest rate needs to be adjusted downward in order to achieve the set management objective (i.e. maintaining a subpopulation size that is in balance with the number of bears the environment can support).

Consultations:

- Community consultations were held with Hunters and Trappers Organization (HTO) representatives from Pond Inlet, Clyde River, and Qikiqtarjuaq from January 9-15, 2017, also including participants from Nunavut Tunngavik Inc. (NTI) and the Qikiqtani Wildlife Board. During those meetings, results of the SWG scientific study report were discussed. Community consultations will be held with HTO representatives from the same communities during the first week of February 2018 to discuss the JC harvest recommendation
- All parties agreed to support an early submission of BB TAH recommendations to the Nunavut Wildlife Management Board (NWMB), before the consultations have taken place. The consultation summary is to be submitted immediately following return from the consultations and completion of translations.
- Depending on the outcome of the consultations, the GN DOE may suggest additional information or recommendations during the March 2018 NWMB regular meeting (RM001-2018).

Recommendations:

1. DOE supports JC recommendation to **increase the current BB TAH from 65 to 80 bears** annually.
2. DOE recommends that the Baffin Bay Polar Bear harvest sex ratio be **set to a 1:1 sex ratio** (1 male harvested for every 1 female harvested) due to the concern for potential depletion of the adult male component of the population.

3. DOE recommends removing one male or one female tag from the next year's community tag allocation for each animal that is overharvested instead of applying the flexible quota system.
4. Allocation between Greenland and Canada =160 (80 for each country).